ICB-1500

SERVICE MANUAL

US Model

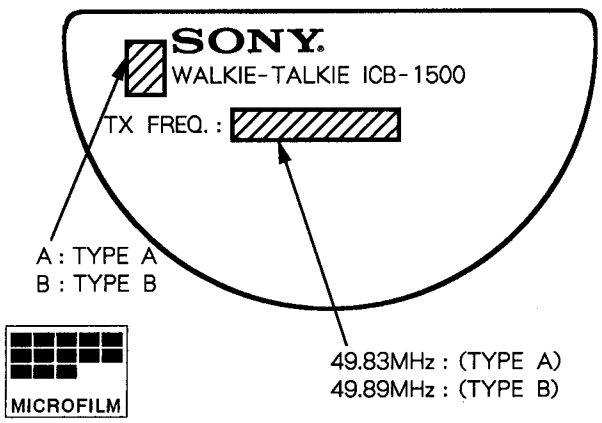
SPECIFICATIONS

Communication system	Duplex (2-way)
Radio wave type	AM
Transmitting frequency	49.83 MHz (TYPE A) and 49.89 MHz (TYPE B)
Antenna	Helical antenna
Audio power output	3 mW
Operating temperature	−10 to +50°C (14 to 122°F)
Power requirements	DC 3 V Two size AA (R6) batteries
Battery life	Sony alkaline AM3 (N): approx. 70 h Sony SUM-3 (NS): approx. 35 h
Dimensions	Approx. 76 x 152 x 34 mm (w/h/d) (3 x 6 x 1 3/8 inches) incl. projecting parts and controls
Mass	Approx. 180 g (6 oz.) per unit, not incl. batteries

Design and specifications subject to change without notice.

MODEL IDENTIFICATION

— Model Number Label —



MICROFILM

NOTE :

- TYPE A : 49.83MHz MODEL
  TYPE B : 49.89MHz MODEL

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

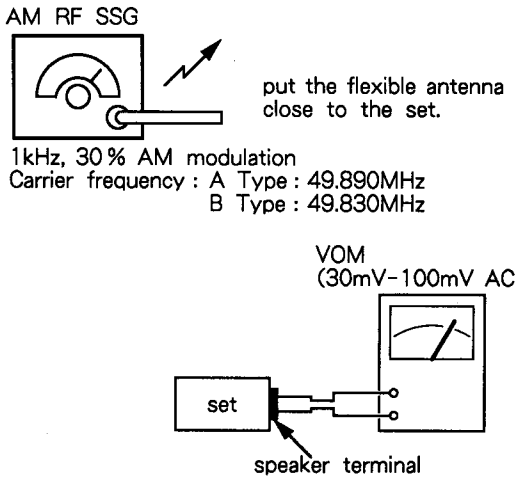
WALKIE-TALKIE

SONY®

SECTION 1
ELECTRICAL ADJUSTMENT

Receiving Adjustment

• **Connection**



• **Setting**

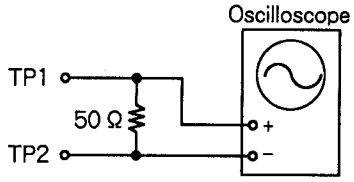
Rotate the antenna/POWER switch (ANT1/S1) : ON
VOL switch (S2) : HIGH

• **Procedure**

Adjust T1 and T2 so that the speaker output is maximum when receiving.

Transmission Output Adjustment

• **Connection**



• **Setting**

Rotate the antenna/POWER switch (ANT1/S1) : ON
VOL switch (S2) : HIGH

Short between points A and B on the MAIN board.

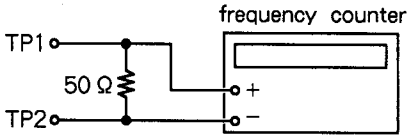
* Signal is transmitted only when MIC input exists controlled by the voice control circuit. By shorting the A-B, the voice control circuit is turned off to transmit signal all the time.

• **Procedure**

Adjustment L4, L5 and L6 so that the output is maximum when transmitting.

OSC Frequency Adjustment

• **Connection**



• **Setting**

Rotate the antenna/POWER switch (ANT1/S1) : ON
VOL switch (S2) : HIGH

• **Procedure**

Adjust CT2 so that the TP1 frequency of type A is 49.830 ± 1.5 kHz or type B is 49.890 ± 1.5kHz respectively when transmitting.

Loading Trimmer Adjustment

* Perform these adjustments after closing the cabinet.

– Simple Adjustment –

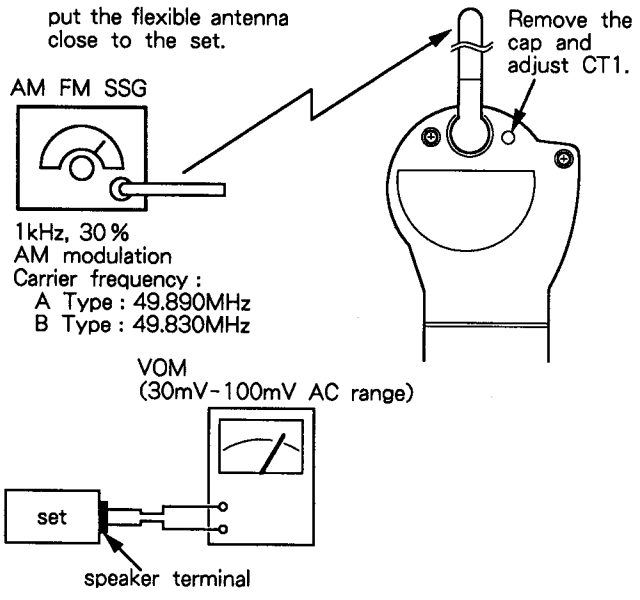
• **Setting**

Rotate the antenna/POWER switch (ANT1/S1) : ON
VOL switch (S2) : HIGH

• **Procedure**

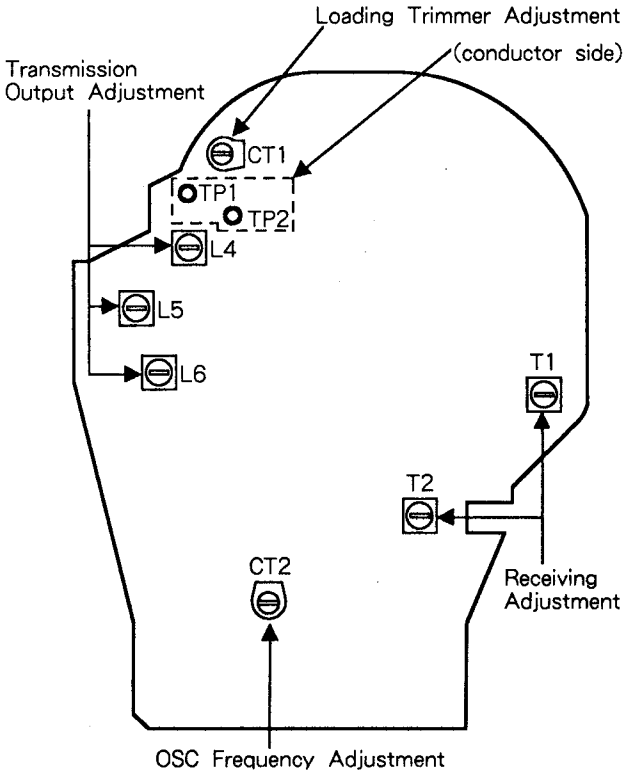
Adjust CT1 so that the receiving sensitivity is maximum.

• **Connection**

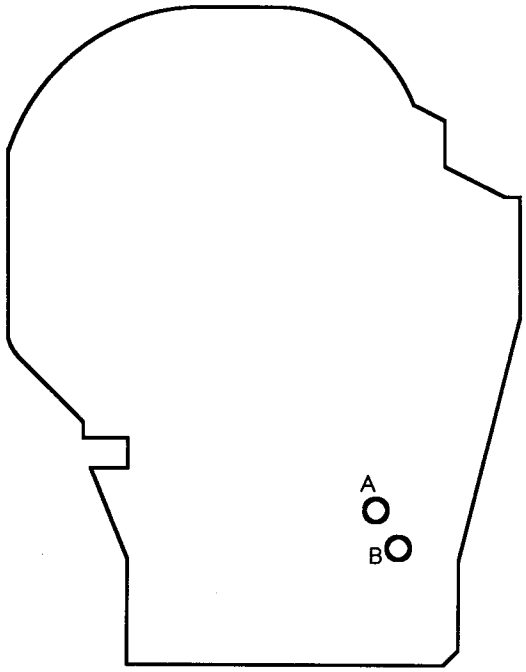


Adjustment Points

(component side)



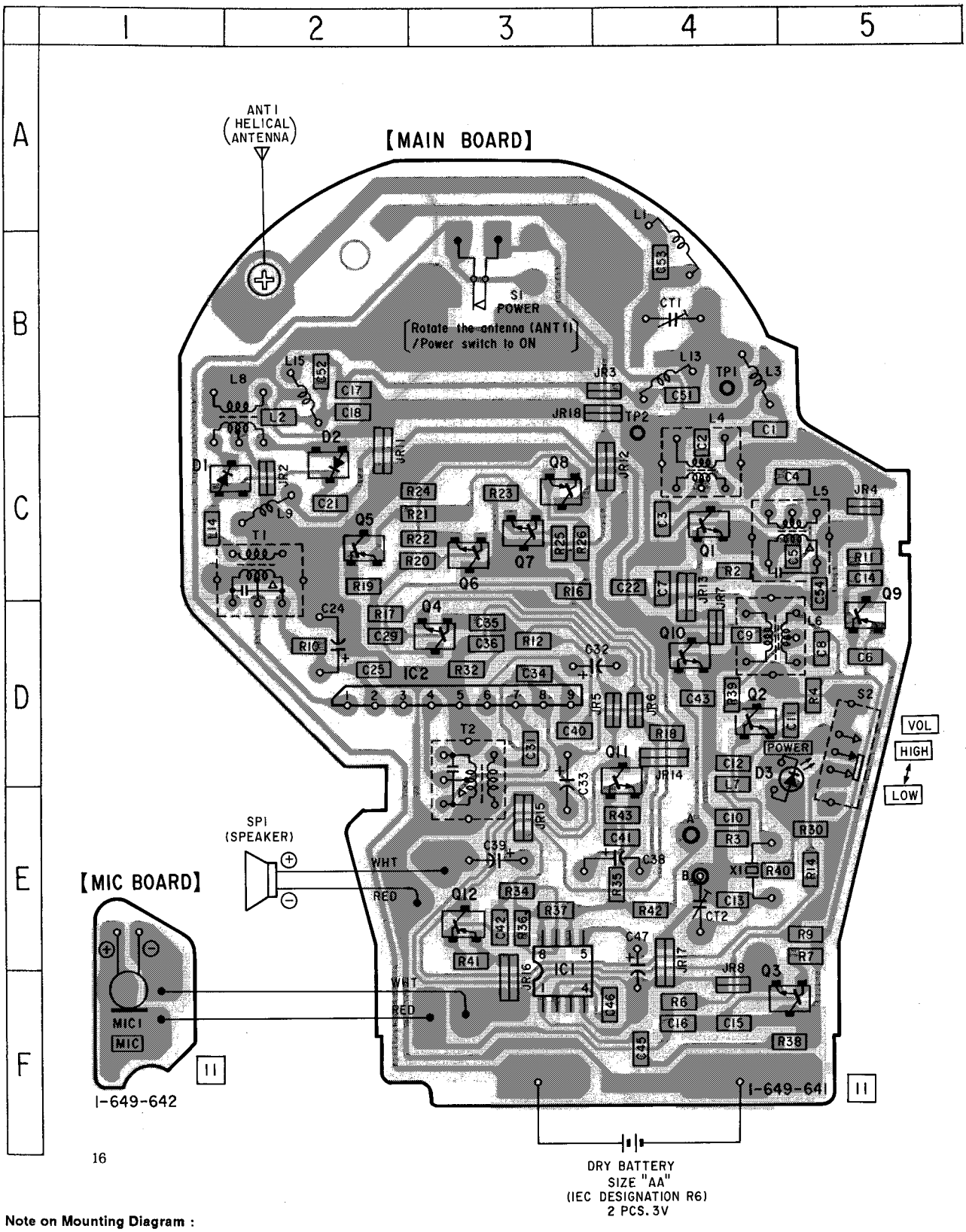
(conductor side)



SECTION 2
DIAGRAMS

2-1. PRINTED WIRING BOARD

• See page 6 for Semiconductor Location.



16

Note on Mounting Diagram :

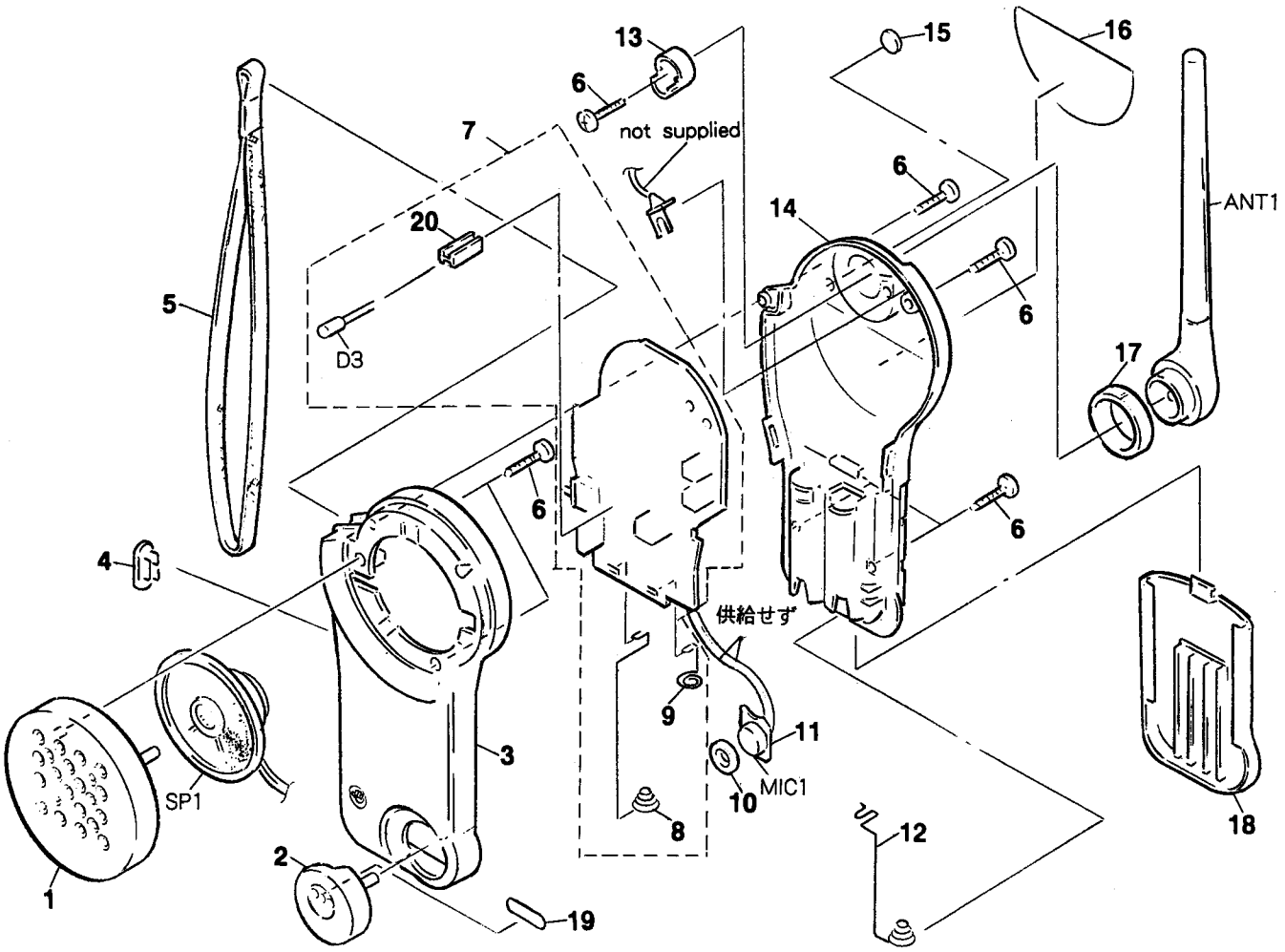
- ○—— : Parts extracted from the component side.
- ●—— : Parts extracted from the conductor side.
- ▒▒▒ : Pattern on the side which is seen.

SECTION 3
EXPLODED VIEW

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE)...(RED)
  ↑ Parts color ↑ Cabinet's color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

- TYPE A : 49.83MHz MODEL
  TYPE B : 49.89MHz MODEL



Ref. No.	Part No.	Description	Remarks
1	3-389-334-01	GRILLE (SP)	
2	3-389-335-01	GRILLE (MIC)	
3	3-389-332-01	CABINET (F)	
4	3-389-337-01	BUTTON (VOL)	
5	3-389-342-01	STRAP, HAND	
6	7-685-135-19	SCREW +BTP 2.6X10 TYPE2 N-S	
* 7	A-4541-040-A	MAIN BOARD, COMPLETE (A) (TYPE A)	
* 7	A-4541-042-A	MAIN BOARD, COMPLETE (B) (TYPE B)	
8	3-389-347-01	TERMINAL (-)	
9	3-389-348-01	TERMINAL (+)	
10	3-906-728-01	HOLDER, MICROPHONE	
* 11	1-649-642-11	MIC BOARD	
12	3-389-346-01	TERMINAL (+,-)	

Ref. No.	Part No.	Description	Remarks
13	3-389-340-01	SLIDER	
14	3-389-333-01	CABINET (R)	
15	3-906-726-01	CAP	
* 16	3-906-727-01	LABEL, MODEL NUMBER (A) (TYPE A)	
* 16	3-906-730-01	LABEL, MODEL NUMBER (B) (TYPE B)	
17	3-389-341-01	RING	
18	3-389-336-01	LID, BATTERY CASE	
19	3-389-344-01	CUSHION (MIC)	
20	3-906-729-01	HOLDER, LED	
ANT1	X-3367-533-1	ANTENNA ASSY	
D3	8-719-938-69	LED GL3PR8	
MIC1	1-542-178-11	MICROPHONE, ELECTRET CONDENSER	
SP1	1-504-417-11	SPEAKER (50CM)	

MIC **MAIN**

SECTION 4
ELECTRICAL PARTS LIST

NOTE:

When indicating parts by reference number, please include the board name.

- TYPE A : 49.83MHz MODEL
  TYPE B : 49.89MHz MODEL

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- −XX, −X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS :
  uF : μF

- RESISTORS
  All resistors are in ohms.
  METAL : metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- COILS
  uH : μH
- SEMICONDUCTORS
  In each case, u : μ, for example :
  uA... : μA... , uPA... , μPA... ,
  uPB... , μPB... ,uPC... , μPC... ,
  uPD..., μPD...

Ref. No.	Part No.	Description			Remarks
*	1-649-642-11	MIC BOARD			
		*********			
		< MICROPHONE >			
MIC1	1-542-178-11	MICROPHONE, ELECTRET CONDENSER			
**********					
*	A-4541-040-A	MAIN BOARD, COMPLETE(A)(TYPE A)			
		**********			
*	A-4541-042-A	MAIN BOARD, COMPLETE(B)(TYPE B)			
		**********			
	3-389-347-01	TERMINAL (-)			
	3-389-348-01	TERMINAL (+)			
	3-906-729-01	HOLDER, LED			
		< CAPACITOR >			
C1	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C2	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C3	1-163-085-00	CERAMIC CHIP	2PF		50V
C4	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C5	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C6	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C7	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C8	1-163-098-00	CERAMIC CHIP	16PF	5%	50V
C9	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C10	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C11	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C12	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C13	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C14	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C15	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C16	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C17	1-163-220-11	CERAMIC CHIP	3PF	0.25PF	50V
C18	1-163-220-11	CERAMIC CHIP	3PF	0.25PF	50V
C21	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C22	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C24	1-124-925-11	ELECT	2.2uF	20%	100V
C25	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C29	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C31	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C32	1-124-234-00	ELECT	22uF	20%	16V
C33	1-126-013-11	ELECT	1000uF	20%	6.3V
C34	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C35	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C36	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C38	1-126-162-11	ELECT	3.3uF	20%	50V
C39	1-124-234-00	ELECT	22uF	20%	16V
C40	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C41	1-164-346-11	CERAMIC CHIP	1uF		16V
C42	1-164-346-11	CERAMIC CHIP	1uF		16V
C43	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C45	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C46	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C47	1-126-154-11	ELECT	47uF	20%	6.3V
C51	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C52	1-163-096-00	CERAMIC CHIP	13PF	5%	50V
C53	1-163-226-11	CERAMIC CHIP	9PF	0.25PF	50V
C54	1-163-098-00	CERAMIC CHIP	16PF	5%	50V
		< TRIMMER >			
CT1	1-141-276-00	CAP, TRIMMER			
CT2	1-141-334-11	CAP, VAR, TRIMMER			
		< DIODE >			
D1	8-719-941-04	DIODE	SB007-03CP		
D2	8-719-941-04	DIODE	SB007-03CP		
D3	8-719-938-69	LED	GL3PR8 (POWER)		
		< IC >			
IC1	8-759-701-51	IC	NJM2072M		
IC2	8-759-802-86	IC	LA1600		

Ref. No.	Part No.	Description			Remarks
		< JUMPER RESISTOR >			
JR2-8					
	1-216-295-00	METAL CHIP	0	5%	1/10W
JR11-18					
	1-216-296-00	METAL CHIP	0	5%	1/8W
		< COIL >			
L1	1-406-871-11	COIL, AIR-CORE			
L2	1-410-981-11	INDUCTOR CHIP	0.1uH		
L3	1-406-871-11	COIL, AIR-CORE			
L4	1-406-872-11	COIL (RF)			
L5	1-406-872-11	COIL (RF)			
L6	1-406-873-11	COIL (RF)			
L7	1-410-993-11	INDUCTOR CHIP	1uH		
L8	1-406-874-11	COIL (MIX)			
L9	1-406-870-11	COIL, AIR-CORE			
L13	1-406-870-11	COIL, AIR-CORE			
L14	1-410-993-11	INDUCTOR CHIP	1uH		
L15	1-406-870-11	COIL, AIR-CORE			
		< TRANSISTOR >			
Q1	8-729-102-08	TRANSISTOR	2SC2223-F14		
Q2	8-729-102-08	TRANSISTOR	2SC2223-F14		
Q3	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q4	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q5	8-729-216-22	TRANSISTOR	2SA1162-G		
Q6	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q7	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q8	8-729-216-22	TRANSISTOR	2SA1162-G		
Q9	8-729-141-48	TRANSISTOR	2SB624-BV345		
Q10	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q11	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q12	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
		< RESISTOR >			
R2	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R3	1-216-037-00	METAL CHIP	330	5%	1/10W
R4	1-216-097-00	METAL CHIP	100K	5%	1/10W
R6	1-216-073-00	METAL CHIP	10K	5%	1/10W
R7	1-216-121-00	METAL CHIP	1M	5%	1/10W
R9	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R10	1-216-043-00	METAL CHIP	560	5%	1/10W
R11	1-216-093-00	METAL CHIP	68K	5%	1/10W
R12	1-216-077-00	METAL CHIP	15K	5%	1/10W
R14	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R16	1-216-097-00	METAL CHIP	100K	5%	1/10W
R17	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R18	1-216-047-00	METAL CHIP	820	5%	1/10W
R19	1-216-043-00	METAL CHIP	560	5%	1/10W
R20	1-216-043-00	METAL CHIP	560	5%	1/10W
R21	1-216-019-00	METAL CHIP	56	5%	1/10W
R22	1-216-019-00	METAL CHIP	56	5%	1/10W
R23	1-216-049-00	METAL CHIP	1K	5%	1/10W
R24	1-216-049-00	METAL CHIP	1K	5%	1/10W
R25	1-216-304-11	METAL CHIP	3.3	5%	1/10W
R26	1-216-304-11	METAL CHIP	3.3	5%	1/10W
R30	1-216-037-00	METAL CHIP	330	5%	1/10W
R32	1-216-121-00	METAL CHIP	1M	5%	1/10W
R34	1-216-049-00	METAL CHIP	1K	5%	1/10W
R35	1-216-049-00	METAL CHIP	1K	5%	1/10W
R36	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R37	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R38	1-216-109-00	METAL CHIP	330K	5%	1/10W
R39	1-216-035-00	METAL CHIP	270	5%	1/10W
R40	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R41	1-216-073-00	METAL CHIP	10K	5%	1/10W
R42	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R43	1-216-073-00	METAL CHIP	10K	5%	1/10W
		< SWITCH >			
S1	1-572-288-11	SWITCH, PUSH (POWER)			
S2	1-692-298-12	SWITCH, SLIDE (VOL)			
		< TRANSFORMER >			
T1	1-406-875-11	TRANSFORMER, IF			
T2	1-406-876-11	TRANSFORMER, IF			
		< VIBRATOR >			
X1	1-760-085-11	VIBRATOR, CRYSTAL 49.830MHz (TYPE A)			
X1	1-760-086-11	VIBRATOR, CRYSTAL 49.890MHz (TYPE B)			

****

ACCESSORIES & PACKING MATERIALS

****

	3-757-444-22	MANUAL, INSTRUCTION (ENGLISH)
*	3-905-224-01	INDIVIDUAL CARTON
*	3-905-225-01	CUSHION, CORRUGATED FIBERBOARD

9-959-093-11

Sony Corporation
General Audio Group

English
93H1628-1
Printed in Japan
©1993.8
Published by Audio Sector Quality Assurance Dept.